Chapter 10

Imagery, Melody and Gesture in Cross-cultural Perspective

Gina A. Fatone, Martin Clayton, Laura Leante and Matt Rahaim

Musical action is also physical action. This is obvious in cases such as moving the arm to direct a bow across a cello string, turning the hand to control the vibrations of a drumhead or inclining the cartilages of the larynx to raise the pitch of a sung note. In addition to producing sound, however, physical motion can also serve as a means of conceiving and conveying music: motion is linked in turn to visual imagery and other aspects of the conceptualization of music. Auditory, motor, visual and conceptual counterparts may be integrated, generating a unified meaningful action. In this chapter we present some examples of such cross-modal phenomena[1] in the context of music and gesture: we discuss, for instance, ways in which visual information in the form of gestures contributes to the way musical performance is experienced, and how mental images of spaces, actions and object motion – co-presented in physical gestures – can influence the way music is performed and play an important role in teaching. The chapter, therefore, locates physical gesture within a complex of cross-modal actions associated with musical performance and transmission. We present four fieldwork studies – indeed four approaches – to analysing relationships between musical sound and gesture in the performances and teaching of individual musicians. Three of these studies are drawn from the world of North Indian vocal music, but the fourth comes from halfway around the globe: the world of bagpipe music in Atlantic Canada. The inter-references of our research acknowledge the possibility of shared elements of musical-gestural co-expression between cultures, and also point to the broader applicability of music and gesture research to both cognitive science and musicology.

We begin with a discussion of the multiple ways gesture may function in a single performance, based on an analysis of the *khyal* singer Vijay Koparkar.[2] This

[1] Our use of the term 'cross-modal' here is not restricted to interaction between lower-order sensory modes. For example, motor actions, vocalization, and imagination, would be considered 'modalities' in this usage of the term.

[2] Analysis developed and written principally by Martin Clayton. This performance was organized by Veena and Hari Sahasrabuddhe and recorded in Mumbai on 20 May 2005 by Martin Clayton, Laura Leante and Jaime Jones. This research was funded by Arts and Humanities Research Council grant number 19110. Clayton has written a more detailed

section is followed by an investigation of how imagery and gesture are implicated in the process of musical meaning construction, grounded in the teaching of three female vocalists from Maharashtra and West Bengal.[3] A third perspective approaches physical gesture and sound as parallel channels, with gesture conceived as motion in space, and includes an analysis of a *raga* performance by singer Girja Devi.[4] Finally, the manual gestures of two Scottish classical bagpipe teachers in Prince Edward Island, Canada, are interpreted as indexical to 'meta-images' or 'meta-gestures' manifested in multiple images of similar 'energetic shape'[5] co-occurring in the teachers' imagination.[6]

The Functions of Gesture in a *Khyal* Performance

Much has been written about the performance of *raga*s, but until recently little attention has been given to its cross-modal nature.[7] Gestures can be seen to complement several different aspects of the musical sound, and auditory cues also elicit movements of reaction and participation from co-performers and listeners. Many performers testify to the important role visual imagery plays in their *raga* presentation, and listeners attest to a similar importance in their listening experiences. For both performers and listeners this visual imaginary seems to be linked to patterns of motor movement (Clayton 2005), as detailed illustrations of singers' gestures presented in the following section strongly suggest. Physical gesture is thus implicated in a complex set of cross-modal interactions, and can provide information about different aspects of performance including sound production, communication between participants and issues of signification.

An account of these interactions might include study of the sounds produced, of the behaviour of participants in a performance (including physical gesture),

---

analysis of parts of this performance (2007), on which this description is based. *Khyal* is the predominant form of classical singing in the North Indian, or Hindustani, tradition, and is referred to in three of the four studies presented in this chapter.

[3] Analysis developed and written principally by Laura Leante. Research conducted in the UK and in Pune, India by Laura Leante, funded by the UK Open University and the Arts and Humanities Research Council (grant numbers 19110 and 19244).

[4] Analysis developed and principally written by Matt Rahaim. Based on research conducted in Pune, India by Matt Rahaim, funded by a 2006–07 Qayum Family Fellowship, and an American Institute of Indian Studies Junior Research Fellowship in 2007–08.

[5] The term 'energetic shape' is borrowed from music theorist Robert Hatten's characterization of gestures of all types (see Hatten 2004: 93).

[6] Analysis developed and principally written by Gina Fatone. Fieldwork conducted by Gina Fatone in Summerside, Prince Edward Island, Canada, in September 2001, funded by a Canadian Studies Graduate Student Fellowship Program grant.

[7] *Raga* performance can be focused on either vocal or instrumental soloists or duets, although all of the examples in this chapter are based on vocal performance by a single soloist.

and of the ways in which a performance is imagined. The first two of these areas can be addressed with recourse to audio-visual recordings: where practical, multi-camera video recordings are a useful aid in that they allow the study of the behaviour of several individuals simultaneously and therefore facilitate study of non-verbal communication and interaction. The following observations of a *khyal* performance of *Raga Multānī* by the singer Vijay Koparkar are based on this approach. The description below focuses on two particular aspects of the performance: the relationship between singing and gesture and the interaction between participants in the performance situation. In his performance of *Raga Multānī* the singer uses three main types of gesture (in other words, he uses gesture in three different ways).[8] These three functions of gesture are as follows (terms in square brackets are from Rimé & Schiaratura 1991):

- Markers [nondepictive gestures] – gestures indicate aspects of musical structure such as a regular pulse or cadence.
- Illustrators [depictive gestures] – movements are linked to the movement or flow of the melody.
- Emblems [symbolic gestures] – gestures have verbal equivalents such as 'well done' or 'take a solo'.

Vijay Koparkar does not deploy these different types of gesture randomly: rather, the switching between different approaches seems to indicate changes in the focus of his attention. Thus, at important transitions such as that between the *ālāp* (unmetred introduction) and his first composition – the point at which his *tablā* accompanist Viswanath Shirodkar joins in – his gesture to the latter (a nod to confirm that the composition is about to start) indicates that his attention is on the need for the two musicians to start the composition together. Immediately after this his beat-marking gestures become prominent, presumably for the same reason, whereas in the *ālāp* phase his gestures seem to be tied much more closely to the melodic flow; for instance, hand movements upward and outward away from his body often accompany upward pitch movement.

The most important point about the deployment of gesture in performance is, therefore, that gesture can relate to the music in different ways, and the way in which it does so gives an indication of the focus of the musician's attention at any particular moment (in this case, shifting between the melodic phrases, the rhythmic structure and inter-performer coordination). More detailed analysis of this particular performance reveals three further points that are pertinent in this instance (we should take care with generalization, since different singers certainly have distinctive gestural styles, although there is a considerable degree of overlap between individuals):

[8] For more on these categories, see Clayton (2005) and Clayton (2008). For more on gesture classification in general, see McNeill (1992: 75ff.) and Kendon (2004: 84ff.).

1. When illustrative gestures accompany the melody they also frequently complement or modify the aural information in some way. Two effects can be observed. First, gesture units – the sequences of movement between returns to a low-energy 'rest' position (see Kendon 2004: 111) – are long (often over 30 seconds). More significantly, perhaps, gesture phrases comprising a 'stroke' usually occurring at the point of maximum effort – with its accompanying preparation movement and sometimes a subsequent holding of the final body position (see Kendon 2004: 112) – seem to incorporate more than one vocal phrase (if these are determined on the basis of the singer's pausing for breath). In this event the gesture phrase seems to indicate a level of intended organization of the melody that cannot be realized vocally because of physical limitations. Second, gestural movements often precede the audible melodic movements that they accompany. For instance, Vijay Koparkar holds his hand steady while sustaining the pitch *tivra* Ma (raised scale degree 4) then moves his hand upwards fractionally before his voice slides upwards to the Pa (scale degree 5).
2. Vijay Koparkar's gesture tends to display a bilateral asymmetry, with illustrative gestures being led by the left hand and beat markers by the right. This may relate to Trevarthen's observation on gesture in babies that 'assertive or demonstrative activity concentrates in the left side of the brain, moving the right arm and hand, often at the same time as apprehensive self-regulatory withdrawal is more active on the right side of the brain, moving the left limb' (1996: 575). Along similar lines, when discussing gesture in adult subjects with damage to the right brain hemisphere, McNeill and Pedelty suggest that the left brain alone, working with the right hand, 'produces a type of narrative in which there is linear form, but form deficient in imagistic content' (1995: 83), an observation that is also consistent with Vijay Koparkar's left hand taking the leading role in his Illustrators and his right hand predominating in his Marker gestures. It is interesting to note that the bilateral asymmetry in gesture displayed by Vijay Koparkar is also a common practice in Western orchestral conducting.

Analysis of video recordings can also be used as an approach to the study of interaction between participants in performance. In this case, analysis of Vijay Koparkar's performance of *Raga Multānī* suggests the following:

3. Interaction between performers cannot be reduced to the transmission and reception of cues. Observation of the different individuals' movements, orientation and facial expressions reveal a more dynamic process of interaction in which cueing gestures (such as the nod from singer to *tablā* player described above) are often, strictly speaking, redundant: they confirm something that all performers already know is about to happen but nonetheless form part of the ongoing performance management. (Some

performers argue that cues and instructions should not be visible to the audience, or even that they are not necessary at all: thus when gestures of instruction are frequent and obvious to the audience, it is likely to be taken by some observers as an indication of a lack of understanding between performers.)

4. The contribution of the audience to the performance can be divided into two kinds, which can be termed 'reaction' and 'participation'. In the former case, audience members respond to an especially beautiful phrase or impressive technical feat, and their gestures and vocal exclamations begin after it has been completed. In the case of participation, audience members show that they are following the music closely by tapping the beat, and particularly by marking the *sam* (beat one) in a manner essentially the same as that employed by the singer himself (this kind of gesture is initiated in advance of the *sam*, and cannot properly be described as a reaction).

It is clear from this analysis of Vijay Koparkar's performance of *Raga Multānī* that gesture can take on a number of different functions within a single vocal performance: although in one sense this complicates analysis, the alternation between different functions also provides a unique level of information in that it indicates the singer's focus of attention. Close examination of the relationship between sound and gesture can significantly enhance our understanding of the way the music is conceptualized by the performer, while study of audience members' gestural behaviour – in a musical tradition where such gesturing is not inhibited – can enable us to better understand the performance dynamics. The following two case studies, which also concern the performance of *khyal*, address in more detail some different gestures that can be described as 'illustrators' and their significance.

Imagery and Gesture in North Indian Vocal Music

North Indian classical musicians often make use of gesture and imagery together in the transmission and performance of their repertories; they do this both to describe the characteristics of the music, and to support techniques of sound production. Images can be conveyed through movement, and gesture thus becomes a way to embody and project qualities inherent in the meaning of music performance.

Taking into account both movement and the imagery associated with it can help shed light on how musicians conceive, construct and develop their music. For example, during an interview recorded in 2006, *khyal* singer Veena Sahasrabuddhe makes an upward movement of her arm while singing a note and describes how the gesture indicates how she was feeling that note in her mind: she explains that while performing *Dha* (the sixth degree of the scale) 'inside' she was also 'singing' *Sa* (the first scale degree) and the arm movement related to her intention of approaching that *Dha* as if it were coming from the lower *Sa*, as in the act of

'picking something [up]'.[9] In other words, the gesture reveals information about the performance that otherwise would not be available (that is, that there is more than the note we hear in the artist's mind). The image accompanying the gesture ('picking something up') clarifies why the singer makes the movement and how she intends to attack the note. Therefore, the performance of the *Dha* takes on a more specific and more complex meaning if analysed from the perspective of the musician, who was using imagery in order to reach the note in the way she intended (see Figure 10.1).

Figure 10.1 Veena Sahasrabuddhe: use of imagery in performance

Different musicians and traditions might value the aesthetic and communicative role of hand movement in performance differently. Nevertheless, gesture and imagery can play a key role in the transmission of music and are often part of a conscious didactic process. Providing an additional example, singer Sudokshina Chatterjee explains how she was encouraged to employ gesture and how her *gharana* (stylistic school) cherishes a vocal timbre that she describes with the aid of a symbolic hand movement, by drawing a parallel between 'open hand' and 'open sound':

[9] Interview with Veena Sahasrabuddhe conducted and recorded in Pune, India by Martin Clayton and Laura Leante, 16 December 2006.

> Ustad Bade Ghulam Ali Khan Sahab used to say you have an open sound if you have an open hand. My teacher also says [that] you should open you hand – then you will have an open sound. (Sudokshina Chatterjee, 20 April 2004)[10]

When taking lessons from her nonagenarian guru Pt. Madhusudan S. Kanetkar (now deceased), singer Manjiri Asanare Kelkar used to rely heavily on visual information and gesture in order to understand instruction that her teacher would have not been able to demonstrate vocally. Their long and close relationship, she claims, allowed her to know what kind of sound quality or music passages would be represented in his gestures:

> Sometimes I guess what he is trying to do. So, now, as he is 90 or so it is easier for him … and for me. Sometimes he just gives the action [and] I understand what he means. (Manjiri Asanare Kelkar, 11 December 2006)[11]

Manjiri herself frequently has recourse to hand movement with her own students. For example, during a teaching session recorded in Pune in December 2006, she performed a gesture structured in a downward curve, followed by smaller arches. Afterwards, when asked about it, she repeated the gesture accompanying a short descending line in *Raga Jaunpuri* (see Figure 10.2), and she used the image of a bouncing ball to explain it (C is the tonal centre throughout):

> When you drop a ball … it just drops like that – it comes slowly, slowly, slowly – it … doesn't stop abruptly, it just doesn't stop where it is. (Manjiri Asanare Kelkar, 11 December 2006)

Strong emphasis is placed on the 'naturalness' of sound by many singers, and imagery is provided as a support for the artist to understand better how the stress and punctuation of musical phrases should be articulated throughout the performance, and Manjiri's bouncing ball is just one of many examples which could be mentioned. Another recurring one is the image of an elastic body being stretched:

> my guruji always uses this action, this thing [gestures] just like a rubber [band]: you stretch it and leave it. With that force it comes down. (Manjiri Asanare-Kelkar, 11 December 2006)

> just like any ball … I am just throwing it and then it comes automatically … it is just like elasticity. (Veena Sahasrabuddhe, 16 December 2006)

[10] Interview conducted in the UK by Martin Clayton, Laura Leante and Nikki Moran.

[11] Interview conducted and recorded in Pune, India by Martin Clayton and Laura Leante.

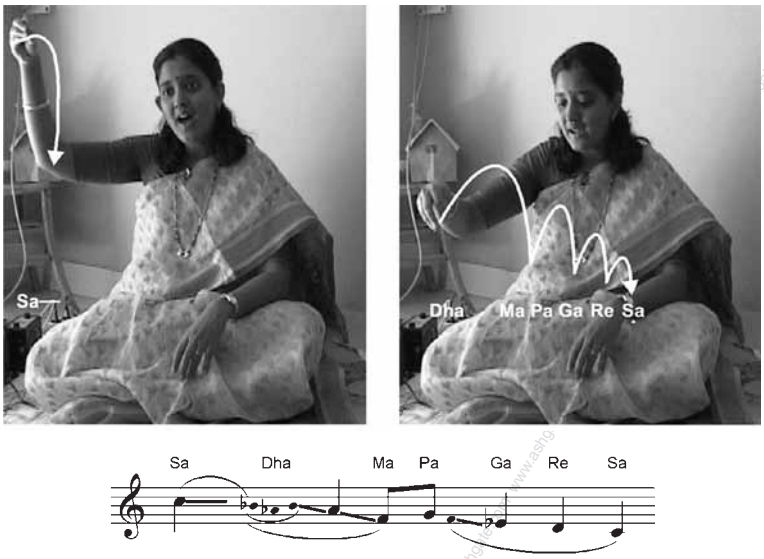


Figure 10.2 Manjiri Asanare Kelkar

All the examples above stress the co-expressiveness between gesture and sound. Nevertheless, in the last two cases (that of the pantomimic 'stretching' gesture and that of the iconic 'bouncing' one) the sound depicts an extra-musical experience. (The reader will no doubt find striking a parallel use of the 'elastic' reference by a bagpipe instructor in Atlantic Canada, presented later in this chapter.) Such sonic rendition is what semiotician Philip Tagg would define as an 'anaphone', a neologism he derived from 'analogy', so that 'if analogy means another way of saying the same thing, anaphone just means using an existing model outside music to produce musical sounds resembling that model' (Tagg 1999: 24). In Tagg's method of music analysis, anaphones account for iconic units of meaning present in a given music and can be of different kinds. The gestures illustrated here are 'kinetic anaphones': representations by means of sound of a pattern of movement. The gesture accompanying the performance of these anaphones is a way to embody, and at the same time to project, the meaning and the image the musician associates with it.

Instances of anaphones and pantomimic gestures abound in the performance and teaching of vocal music. Another case is presented by Veena Sahasrabuddhe, who explains how she uses the image of 'tying knots' to emphasize certain moments of the performance, for example when she sings an embellishment called *khatka*. In this ornament, a degree of the scale (the note on which the knot is 'tied')

is highlighted by a quick movement (the 'knot' itself) that precedes the note and that is set out within a small range[12] (see Figure 10.3).

Figure 10.3 Veena Sahasrabuddhe: the 'knot' gesture

Veena used this 'knot' gesture during both interview and teaching sessions, and applied it in different *ragas*.[13] On one occasion she performed it repeatedly in order to show a student how to sing a *khatka* and she 'tied knots' higher or lower in the air according to different degrees of the scale on which she was performing the ornament. This practice seems to hint at a tendency to accompany singing with movements that correlate with the relative height of the pitch. Nevertheless, it should be noticed that most of the times she performed the knot, she 'tied it' just above her lap, and therefore the correspondence between pitch and space is not intrinsic to the performance of this gesture. In other words, the value of the 'knot gesture' lies mostly in its function of supporting the anaphone associated with it. During a concert, the knot would be less marked and the distinction from a more generic stretching movement could be less evident. In fact, anaphones should be considered within the wider context in which they are performed: as Veena herself once suggested, the performance of the knot gesture should also be considered together with the image of the elastic body discussed above, and interpreted within the wider aesthetics emphasizing the 'flow' of musical phrases.

> [the] knot comes whenever I am singing one swara [*note*] [and] I want to make that swara a little longer … and very firm at the same time. So, it comes like … elasticity. (Veena Sahasrabuddhe, 16 December 2006)

The examples analysed above show how different kinds of gestures are implicated in the performance and teaching of music. These gestures represent a way to embody and express qualities that the musician attributes to the sound and articulates through the use of images. Analysing movement and imagery together is therefore important in understanding how artists relate to their music and construct meaning in performance. Later in this chapter we will see how the combined domains of gesture and imagery function similarly in the transmission of an instrumental tradition from another part of the world.

---

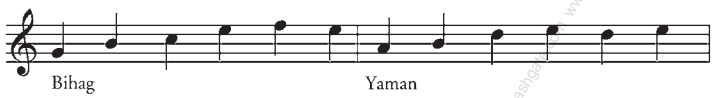
[12] 'Gesture goes with the *swaras* [notes]. Suppose, if there is a little bit of *khatka* … in my mind it's going to be like just putting a knot there'(Veena Sahasrabuddhe, 18 May 2005).

[13] Recordings carried out by Martin Clayton and Laura Leante in Mumbai (21 May 2005) and Pune (16 December 2006), India.

Gesture in *Raga* Space

The melodies and gestures of North Indian vocalists can also be seen as navigations through the space of a *raga*. A *raga*, in the music-theoretic approach that has been dominant for the last hundred years, is usually described in terms of a kind of melodic grammar: a set of rules. These rules dictate how notes should be arranged sequentially to generate acceptable melodies. For example, ascending to the third scale degree is accomplished quite differently in *Raga Bihag* and *Raga Yaman* (see Example 10.1). To sing the first melodic sentence in the middle of a performance of *Raga Yaman*, or the second melodic sentence in *Raga Bihag* is often described as a kind of 'grammatical' error.

Example 10.1 Ways of ascending to the third scale degree in *Raga Bihag* and *Raga Yaman*



Melodic action is not only described in terms of grammar, however. Informally, musicians sometimes also speak of *raga* as though it were a place or a space. It is common to say that one is 'in' a certain *raga* when one is performing it. Melodic action, likewise, is described as motion within the space of a *raga*. This metaphor is apparent both in English and in Hindi. For example, in *Bihag* [*Bihag mein*] one ascends [*arohan karna*] to the third scale degree by leaping over [*langhana*] the second. While in the space/place of a *raga*, one walks on certain paths, briefly touches certain points, stops to rest on others. Furthermore, musicians sometimes speak of various spaces/places (*'jagah')* within *raga*s – for example, the space between the first and third scale degrees described above.[14] A given *raga* may be further spatialized in visual imagery showing a dramatic scene, or representing a season or a time of day, as in *ragamala* paintings (see Ebeling 1973). A popular comic representation of the great singer Tansen, for example, shows jagged yellow and orange stripes emanating from his body into the space around him as he fills the air with the heat of *Raga Dipak* (Rizvi & Lien 1998[1975]: 29).

The depiction of a *raga* as a space may at first seem arcane, even deliberately mystifying. Equally mystifying to some, perhaps, are the gestures of North Indian vocalists. These gestures, caricatured by music critics as 'acrobatics', 'contortions' or 'spasmodic physical movements' (Nadkarni 2005: 178; Pingle 1962[1894]: 103–4 and 110; Chitra in Neuman 2004: 375), have generally been regarded as irrelevant to music. Gesture is widely considered a distracting sideshow to music, which, according to the dominant grammar-based model, is made of notes, as

[14] For a detailed description of *jagah* in Hindustani music, see Neuman (2004: Chapter 4).

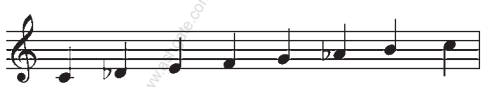
sentences are made of words. However, if we instead take seriously the sense in which melody is motion in space, the importance of gesture becomes clear. (This, after all, is no more of a metaphoric stretch than considering music to be like language.)

A close look at gesture in North Indian vocal performance suggests there is a way of knowing music that is spatial, kinesthetic and three-dimensional; one that is made physically present through gesture (see Rahaim 2008). The above illustrations of vocalists provide clear examples of common gestures that link melody with space and texture. Like speech gestures, these vary widely from singer to singer, and most singers have a wide repertoire of gestures at hand. Singers may, for example, gesturally model the phrase '1–6♭–4–5–3♭–2–1' (the example from *Raga Jaunpuri* performed by Manjiri Asanare Kelkar in Figure 10.2 above) as descending motion, or as motion from left-to-right, or right-to-left, or as a gradually shrinking space. There are numerous ways that a phrase with this pitch contour might unfold in space, depending on the singer and the context.

This interpretation brings us back to the widespread, if mostly implicit, conception of a *raga* as a space. The spaces of *raga*s serve as particularly important contexts for melodic motion. If a *raga* is a space, it is not an empty space, or a set of equal points. *Raga*s serve as flexible but stable topographies that singers explore through both melodic and gestural action. Singers navigate the space of a *raga* in the physical space around their body. Singers explore this space while elaborating on melodies, moving through particular regions via particular melodic paths, with particular textures and topographies.

An example of a special *raga* topology can be seen in a performance of the *Raga Ramkali*. *Ramkali* is closely related to one of the most well-known *raga*s in Hindustani music: *Bhairav*. *Bhairav* has a wide repertoire and many variants. *Ramkali* is almost universally considered a variant of *Bhairav*, rather than the other way round. Since the relationship between *Ramkali* and *Bhairav* are so important in the performance analysed below, it is helpful to begin with a basic grammatical sketch to highlight the similarities and differences. The scale of *Bhairav* is given below in Example 10.2.

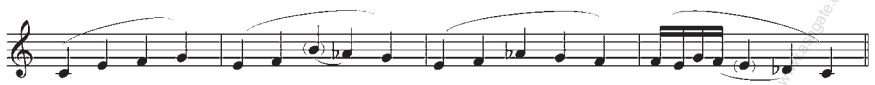
Example 10.2 The scale of *Raga Bhairav*



The lowered-6 and the lowered-2 tend to be approached from scale degree 7 and scale degree 3, respectively. A few of *Bhairav's* characteristic phrases, or *calan* (literally, gait) are given in Example 10.3.

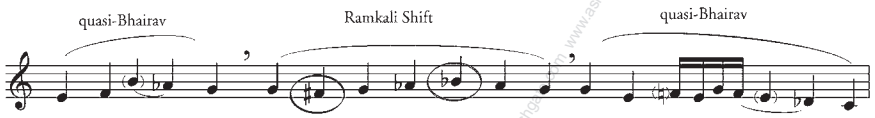
These phrases distinguish *Bhairav* from the several other *raga*s, such as *Gauri* and *Kalingda*, which have the same scale, but are not *Bhairav*. Unlike most variants of *Bhairav*, however, *Ramkali* also uses all of *Bhairav's* distinctive phrases. It is distinguished by an occasional use of a sharp fourth and flat seventh.

Example 10.3 *Bhairav calan*



These notes are used to elaborate on and emphasize the fifth scale degree to a greater degree than in *Bhairav* (which tends to emphasize the natural fourth as a resting tone). Here is an example of how these distinctive notes might be inserted into an otherwise *Bhairav*-ish sequence (see Example 10.4). *Ramkali* shifts are, in terms of notes, the primary feature that distinguishes *Ramkali* from *Bhairav*. The space of *Bhairav*-like melodic action in *Ramkali* is called 'quasi-*Bhairav*'.

Example 10.4 *Ramkali* shifts



So much for a grammatical sketch. Now we turn to the spatial enactment of *Ramkali*. We will take as an example Girja Devi's performance of *Raga Ramkalı* at the 1991 Savai Gandharva Music Festival in Pune, India.[15] Here, Girja Devi navigates the space of *Ramkalı* both by singing and by gesturing in the physical space around her. In particular, she broadly delineates two *sub-spaces*[16] (that is, consistent spaces within the *raga* space) one for the ordinary motion in quasi-*Bhairav* space, and one specially reserved for *Ramkali* shifts.

The quasi-*Bhairav* motion is generally one-handed (right), and takes place in a space roughly defined by her abdomen. The *Ramkali* shifts, in contrast, are two-handed, and are placed in a small sphere in front of her solar plexus. More striking is the distinctive internal contour of this space. Her hands curl around each other without touching, as though tracing a curvaceous three-dimensional figure. The movement in this space is rotational, just as the arc of the *Ramkalı* shift pivots around the fifth scale degree without any net motion. This stands in contrast to most of her other gestures, which are generally translational: they move from one

[15] This concert took place at New English School in Pune on December 12, 1991. The recording is available on VCD from Fountain: FMRVCD-13.

[16] Some readers may recognize the terms 'space' and 'sub-space' from the algebra of vector spaces. The loose analogy works to a certain extent: a *raga* space, like a vector space, is defined by relations between its elements rather than by pre-given boundaries. A *raga* space can furthermore be seen to be closed over certain melodic operations the way that a vector space is closed over certain arithmetic operations. However, like any analogy, it has limits: if *raga* spaces were actually vector spaces, a singer would be unable to stop singing one *raga* and start singing another!

point to another in space. Finally, the *Ramkali* shift is usually enacted with more shoulder tension than the rest of the performance (see Table 10.1).

Table 10.1 Quasi-*Bhairav* and *Ramkali* sub-spaces

	Quasi-*Bhairav* sub-space	***Ramkali* shift sub-space**
Boundary	trunk	abdomen
Motion	translational	rotational
Number of hands	one	two
Relative tension	relaxed	tense

Note that the sub-spaces are defined only in part by their edges. They are defined also by the special contours along which gesture occurs in them. Although the gestural pattern above is very consistent in the particular performance of *Raga Ramkali* analysed here (of 34 *Ramkali* shifts, 30 are enacted via this gesture) we should not read this to mean that the space of *Ramkali* is the same no matter who is performing. Bhimsen Joshi's Savai Gandharva performance, for example, shows no trace of it. Unlike the grammar of *ragas*, which have gradually become more and more standard and precise, gesture remains idiosyncratic. Some patterns are particular to certain lineages, others are unique to individuals, some seem only to last as long as a single performance.

'Meta-gesture' in the Transmission of Scottish Classical Bagpiping

The studies so far described in this chapter posit relationships between melody and physical gesture among vocalists within one (broadly speaking) musical tradition. A study of gesture within an instrumental tradition provides a perspective on the roles of musicians' gestures within a different set of constraints. For example, how do we assess the importance of gestures when the hands are – in contrast to singers – occupied with producing musical sound?

Physical gestures can be an implicit component of one-on-one musical instruction (instrumental as well as vocal) – often a scenario in which one musician tries to communicate how to conceptualize and perform a given musical interpretation to another musician. This appears to be the case in the North Indian examples above referring to teaching situations. We have also seen that physical gestures made by teachers may be understood as indices to other kinds of images co-occurring in the teacher's imagination as she tries to communicate musical intent. These 'other kinds of images' are frequently metaphors of motion from non-aural domains; notably imagined object motion (such as Manjiri Asanare Kelkar's bouncing ball) as well as bodily motion (such as Veena Sahasrabuddhe's tying of knots). Each set of co-occurring images may be thought of as a unitary cognitive experience – a kind of 'meta-gesture' – with individual images from

different modalities (aural, visual, motor, imagined) playing co-articulating roles. Viewed from this perspective, teacher gestures in the context of face-to-face musical transmission may be understood as one component of an inherently inter-modal experience we call 'musical'.

Analysis of several examples of teacher gestures in the context of classical Scottish bagpiping (called *piobaireachd*)[17] illustrates the idea of meta-gesture in the transmission of instrumental music. In video recorded *piobaireachd* lessons taught by pipe instructors Lynda Mackay[18] and Bruce Gandy[19] in Prince Edward Island, Canada in 2001,[20] it is possible to identify at least one 'energetic shaping' expressed repeatedly in various modalities within each teacher's demonstrated instruction. In the video-taped examples discussed here, the same *piobaireachd* tune ('Rout of Glenfruin') is taught by both teachers, using staff notation.

One meta-gesture in Mackay's teaching is the cycle or circle. She 'draws' circles of various sizes with her chanter while she's playing and with her hand while she's listening to students play. Mackay also verbally expresses the mental image of 'a circle going around', and the cycle of a wave as it repeatedly crashes on the shore and recedes. In each of Mackay's images of motion – the circle she draws 'going around' with her hand and with her chanter, and the crashing wave – there is a slight 'hitch' in the motion each time the figure comes around. In each case, the musical analogue is a repeated melodic figure that contains a point of elongation or marked stress somewhere along the way. Mackay's visual images convey finely nuanced patterns of lengthening and shortening of melody notes not discernible from the printed score (see Figure 10.4). This quality of nuance in timing, co-expressed in sound and manual gesture, is likewise achieved by Veena Sahasrabuddhe's combined repertoire of anaphones (following Tagg), taken together (as noted previously) to emphasize a broader aesthetic of musical flow.

A second set of images documents piper Bruce Gandy teaching privately in his home in Prince Edward Island in September 2001 (see Figure 10.5). Gandy's

[17] Referred to as the classical solo repertoire for the Highland bagpipe, *piobaireachd* is a highly stylized, ground and variation form with roots reaching back as far as the sixteenth century.

[18] Lynda McKay taught piping and drumming at The College of Piping and Celtic Performing Arts in Summerside, Prince Edward Island, from 2000 to 2005. She is currently Pipe Sergeant with the Peel Regional Police Pipe out of Brampton, Ontario, Canada.

[19] Bruce Gandy was Piping Instructor and Pipe Major at The College of Piping and Celtic Performing Arts, Canada, from 1997 to 2002. An Inverness Gold and Oban medalist, he is currently Head Instructor at the Halifax Citadel Regimental Association in Nova Scotia.

[20] These video recordings were made in September 2001 by Gina Fatone in Summerside, Prince Edward Island, Canada. This fieldwork was funded by a Canadian Studies Graduate Student Fellowship Program grant.

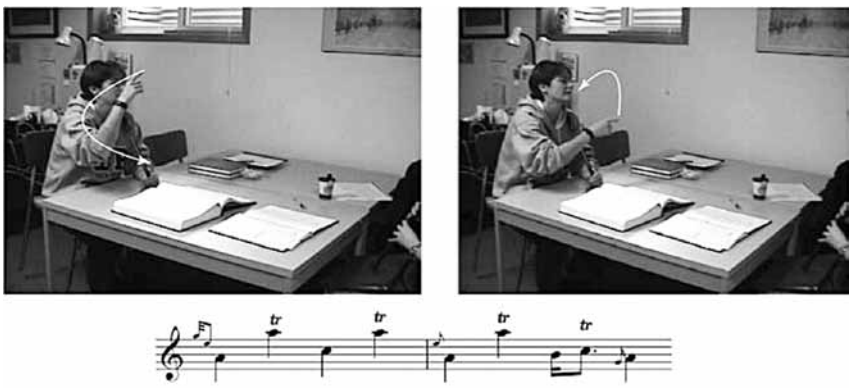


Figure 10.4 Lynda Mackay, The College of Piping, Prince Edward Island, Canada, September 2001. Rout of Glenfruin (Thumb Variation, opening bars)[21]

physical gestures are generally fluid, large and amorphous. The meta-image that comes up repeatedly in interviews and lessons with Gandy is 'elastic' – a striking parallel to the North Indian usage of the term described earlier. Gandy verbally refers to both the concrete object (an elastic band) and elasticity as a musical property directly; and also refers to the property indirectly, with language such as 'pull the tune at the edges', 'this tune has to bend' and 'tighten it up'.[22]

Figure 10.5 Bruce Gandy, Summerside, Prince Edward Island, Canada

In the teaching scenarios sampled above, the idea that the instrument itself is not the best way to 'get at the music' – even though the music is ultimately to be performed on the instrument – is implied repeatedly, and sometimes explicitly stated. In addition to instrumental demonstration, instructors use vocalization, conducting-like gestures with hands or chanter, or verbal presentation of metaphoric images of motion, to convey musical information. We take these multi-modal teacher

[21] Notation excerpted from *The Kilberry Book of Ceol Mor* edited by Archibald Campbell, Sixth edition (1989[1948]: 91).

[22] Bruce Gandy, 21 September 2001, Summerside, Prince Edward Island, Canada. Intercultural use of the same metaphor to communicate musical intent would seem to merit further attention.

behaviours for granted; they are implicitly understood as part of the teaching process. Yet, it is the implicitness itself that is intriguing. Several questions come immediately to mind: Why are such physical gestures made by these teachers in the first place? Why does cross-modal imagery (of which physical gesture is one type here) seem to be such an inherent part of the transmission process? Why does the teacher not just say, 'play it like this' and simply model the musical phrase for the student on the instrument? Is it not redundant to gesture and conjure metaphors?

As music theorist Robert Hatten (2004) notes in his recent theory of musical gesture, research in psychology and psycholinguistics propels one to consider more biologically fundamental reasons why gestures of all types occur. Psychological studies have determined that perception itself is cross-modal. Cross-modality is an empirically demonstrated, fundamental aspect of cognition. That is, our brains integrate input from the different senses to form a coherent interpretation of what is going on around us. Hatten's broad definition of gesture of all types, which is, 'significant energetic shapings through time' (2004:93) helps us grasp the concept of cross-modal images combining cognitively as a unitary experience. 'The basic shape of an expressive gesture', Hatten states, 'is isomorphic and intermodal across all systems of production and interpretation' (2004: 109). If this is the case, it may follow that 'multi-modalizing' musical content – or cross-modal occurrences in any aspect of musicking (whether one is performing, teaching, or listening) – is a spontaneous and automatic process.

Gesture analyst David McNeill maintains gestures co-occur with speaking, because as analog entities (as opposed to words, which are digital entities) gestures 'materialize' (his term) meaning that words cannot. Furthermore, McNeill states, 'Imagery is embodied in the gestures that universally and automatically occur with speech' (2005: 15). McNeill proposes language is inseparable from imagery. However, it seems that non-linguistic thought (in this case, music) is also inseparable from imagery, and the automaticity with which we access analogous images from other non-aural sensory modes, whether speaking about music, playing music or listening to music, is richly evident.

So, then, what may set gesture in teaching apart from gesture that co-occurs with other forms of musicking? In teaching, there tends to be a sophisticated elaboration of an idea. That is, there is often much repetition, and communication of the same concept in multiple ways, in hopes of finding something that will stick with the student. In performing, or in listening to a performance of music, on the other hand, there is one chance to convey meaning in any given musical micro-moment. Teaching is less of a 'one-shot deal'. In teaching, there are multiple opportunities to 'materialize' (to use McNeill's term) a musical moment. Perhaps, the struggle to *communicate how* to conceptualize and perform a given musical gesture (in other words the struggle to communicate about non-linguistic communication) makes the one-on-one transmission context especially rich in cross-modal imagery, including physical gesture.

Viewed from the perspective that musical experience is inherently synaesthetic (where higher-order perception and cognition is not excluded from the definition

of the term), physical and non-physical gestures combine in the teacher's struggle to communicate musical intention. Teachers' visual 'materializations' of imagined images such as the crashing wave and the stretching of an elastic band; as well as physical hand and chanter gestures, help students refine their conceptualization of the musical gesture, which is greater than aurality alone.

Conclusion

The four case studies in this chapter, individually and collectively, locate physical gesture among a variety of cross-modal phenomena associated with musical performance and transmission. The first study examines the multiple functions of gesture within a single *khyal* performance, distinguishing illustrator gestures from markers and emblems, and placing their deployment within the wider performance context. The following two studies also describe *khyal* performances: one examines several illustrative gestures as observed in teaching and demonstration contexts, showing how they are linked to visual and kinesthetic imagery; the other considers how physical gesture relates to the idea of melodic space or place, with particular patterns of movement describing individual topographies. Moving away from India, our fourth fieldwork study demonstrates how many of the same features – broadly speaking – can also be observed in the transmission of bagpipe repertory in Atlantic Canada, and further develops the idea of 'meta-images' or 'meta-gestures' underpinning many individual instances of physical gesture and image deployed in musical performance and teaching.

Taken together, the work collectively presented in this chapter draws attention to physical gestures in musicking – of all types – as indices to mental representations of 'music as motion' as a possible feature of cross-cultural musical thought. The analyses of melody and physical gesture as parallel channels, or co-occurring realizations of the same meta-gesture, suggest that gesture is not limited to musical communication, but points to a fundamental constituent of musicking in general. Our discussion of relationships between imagery, melody and gesture has been restricted to two essentially monophonic musical traditions, however. A greater pool of research in music and gesture that takes a broad range of musical practices into account will undoubtedly challenge and expand our ideas of what music can be.

References

Campbell, A. (ed.) (1989[1948]). *The Kilberry Book of Ceol Mor*. Glasgow: The Piobaireachd Society.

Clayton, M. (2005). Communication in Indian Raga Performance. In D. Miell, R. MacDonald & D. Hargreaves (eds), *Musical Communication* (pp. 361–81). Oxford: Oxford University Press.

— (2007). Time, Gesture and Attention in a *Khyal* Performance. *Asian Music* 38/2: 71–96.
— (2008). Toward an Ethnomusicology of Sound Experience. In H. Stobart (ed.), *The New (Ethno)musicologies* (pp. 135–69). Lanham, MD: Scarecrow Press.
Ebeling, K. (1973). *Ragamala Painting*. Basel: Ravi Kumar.
Hatten, R. (2004). *Interpreting Musical Gestures, Topics, and Tropes: Mozart, Beethoven, Schubert*. Bloomington, IN: Indiana University Press.
Kendon, A. (2004). *Gesture: Visible Action As Utterance*. Cambridge: Cambridge University Press.
McNeill, D. (1992). *Hand and Mind: What Gestures Reveal About Thought*. Chicago: Chicago University Press.
— (2005). *Gesture and Thought*. Chicago: University of Chicago Press.
— & Pedelty, L. (1995). Right Brain and Gesture. In K. Emmorey & J. Reilly (eds.), *Language, Gesture and Space* (pp. 63–85). Hillsdale, NJ: Lawrence Erlbaum Associates.
Nadkarni, M. (2005). *The Great Masters: Profiles in Hindustani Classical Vocal Music*. New Delhi: Rupa.
Neuman, D. (2004). *A House of Music: The Hindustani Musician and the Crafting of Traditions*. PhD Dissertation, Columbia University.
Pingle, B. (1962[1894]). *History of Indian Music with Particular Reference to Theory and Practice*. Calcutta: Susil Gupta.
Rahaim, Matt. 2008. Gesture and Melody in Indian Vocal Music. *Gesture* 8(3): 325–47.
Rimé, B. & Schiaratura, L. (1991). Gesture and Speech. In R. S. Feldman & B. Rimé (eds.), *Fundamentals of Nonverbal Behavior* (pp. 239–81). Cambridge: Cambridge University Press.
Rizvi, D. & Lien, Y. (1998[1975]). *Tansen*. Amar Chitra Katha Series. Mumbai: India Book House Ltd.
Tagg, P. (1999). Introductory Notes to the Semiotics of Music (http://www.tagg.org; accessed June 2007).
Trevarthen, C. (1996). Lateral Assymetries in Infancy: Implications for the Development of the Hemispheres. *Neuroscience and Biobehavioral Reviews* 20/4: 571–86.
Vines, B., Krumhansl, C., Wanderley, M. & Levitin, D. (2006). Cross-modal Interactions in the Perception of Musical Performance. *Cognition* 101: 80–113.